

# Mapping of the Community-based Seed Banks in India

Uday K. Nagubandi, Kanna K. Siripurapu and Bhagya Laxmi





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## **Cover Photo:-**

Dimsa Sendriya Vithana Utpathi Kendram,

SANJEEVANI NGO, Visakhapatnam district, Andhra Pradesh

# MAPPING OF THE COMMUNITY - BASED SEED BANKS IN INDIA

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## Introduction

For over ten thousand years, thousands of farmers (mostly indigenous small-scale) around the world have developed thousands of landraces, food crop varieties and strains in thousands of field laboratories across the globe. Among them is the indigenous agriculture system of India which is not only one of the oldest but also most advanced forms of sustainable food production systems in the world. India was the reservoir of up to 200,000 of indigenous paddy varieties and 1000 varieties of indigenous mango varieties. The concept community-based seed bank (CBSB) for in-situ conservation of indigenous landraces had been an integral part of the ancient indigenous and traditional agricultural practices in India. Things however, have changed drastically since the advent and global expansion of industrial agriculture during 1960s and 1970s and the Biotechnology Revolution of the 1990s. Unfortunately, much of the priceless indigenous crop and livestock biodiversity and their associated socio-cultural and traditional practices have been degraded with industrialization of agriculture in India.

Community-based seed banks (CSBs) play a vital role not only in conservation and maintaining sufficient seed stocks but also ensures timely availability of locally preferred contingency seeds in case of any unforeseen crop failures. CBSBs are crucial for increasing access of farmers to crops and the germplasm, safeguards the indigenous knowledge systems, and also ensure their sovereignty over seeds and food production. Usually CBSBs conserve local varieties and landraces preferred by local farmers. A few CBSBs are also known to conserve and playing a

vital role in restoration of "locally extinct" and "rare" crop varieties. However, there is a dearth of information not only pertaining to the status and number of CBSBs present in the country but also on the number of crop varieties and landraces conserved by CBSBs.

In this context the Working Group on Seed Systems (WGoSS) for Rainfed Areas of Revitalising Rainfed Agriculture Network (RRA Network) has commissioned a study to enumerate the number of CSBs and the number of crops maintained by such CBSBs in the sub-continent.

## Methodology

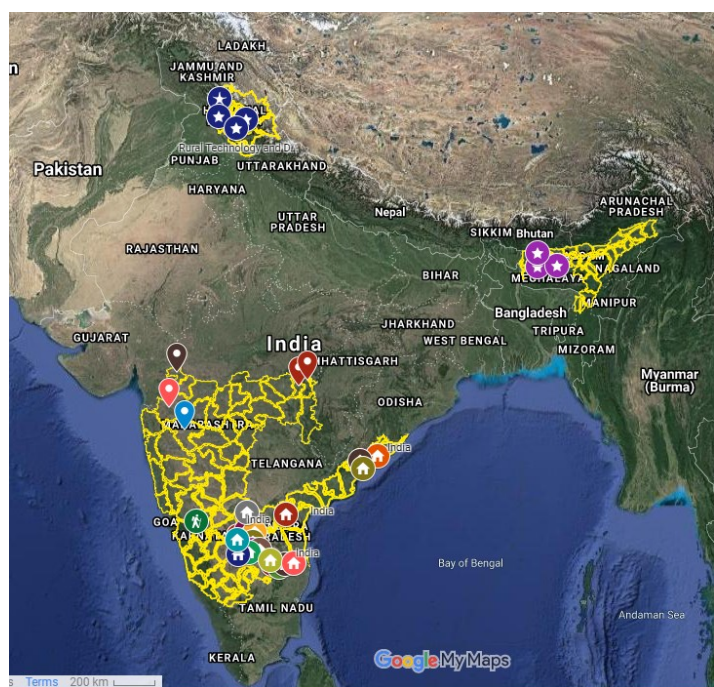
An online survey was conducted by the WGoSS during September – October 2020, by deploying a specially designed questionnaires. Using the Google platform, the two survey questionnaires of the present study were deployed to the target resource persons/ organizations for data collection.

Questionnaires were sent to over **250 Organizations** identified from the existing database of WASSAN - RRA Network. A variety of electronic platforms were used for deploying the questionnaires - **Google groups, Social Media platforms** (WhatsApp and Facebook) and E-mails to reach out to the sources of information.

- 1 Westmoreland, P. 1999. Strategies for the Conservation of Plant Genetic Resources for Food and Agriculture. The conservation of plant genetic diversity is critical for the survival of the human species.
- 2 Ramprasad, V. 2002. Community seed banking and on-farm conservation in India. Farmers Rights.
- 3 Vernooij, R., B. Sthapit, G. Galluzzi, and P. Shrestha. 2014. The Multiple Functions and Services of Community Seedbanks. Resources, 3, 636-656; doi:10.3390/resources3040636.

## Results and Discussion

Out of the **250 organizations** approached only **97 (38%)**, mostly non-for-profit organizations / civil society organizations from **15 Indian states** responded to the survey (**Map 1**).



Google Map Source:

<https://www.google.com/maps/d/viewer?mid=1VNnQktTQ-nWu0nhz0nt84PDJiZpIsqAe&ll=22.84518406352983%2C84.3342385&z=5>

### ANDHRA PRADESH

All items

### NGOs\_AP

AASRA (1)

APPLES (2)

APPLES (2)

FORD (3)

... 16 more

### MAHARASHTRA

All items

### NGOs\_Maharashtra

Sourabh Gram vikas Bshuddeshiya prati...

Gramin Yuva Pragatik Mandal

Gramin Yuva Pragatik Mandal

Pragati Abhiyan

Devlopment Support Center

### HIMACHAL PRADESH

All items

### NGOs\_HP

Rural Technology and Development Cent...

Rural Technology and Development Cent...

Rural Technology and Development Cent...

Rural Technology and Development Cent...

### Karnataka

All items

### NGOs\_karnataka

Sahaja Samrudha

### NGO\_ASSAM

Seven Sisters Development Assistance (...)

Seven Sisters Development Assistance (...)

Seven Sisters Development Assistance (...)

### Assam

All items

The respondent organizations are spread across **15 Indian states** and are involved in assisting / managing the CBSBs in their respective states. Out of the total respondent organizations majority of them are found in Andhra Pradesh and Telangana, followed by Gujarat and Madhya Pradesh, and Odisha (*Table - 1*)

Table 1. Number of Community-based Seed Banks Located in Each Responding State of the Present Study

Name of the State	Number of CBSBs
Andhra Pradesh	20
Assam	4
Chhattisgarh	3
Himachal Pradesh	1
Gujarat	11
Jharkhand	1
Karnataka	1
Madhya Pradesh	11
Maharashtra	5
Mizoram	1
Odisha	9
Rajasthan	3
Telangana	20
Tripura	3
Uttar Pradesh	4
<b>TOTAL</b>	<b>97</b>



It was found that about **779 crop varieties** belonging to **10** crop species are maintained by the CBSBs of the study area. On an average each organization is managing about **8** crop varieties.

Table 2. Details of the Community-based Seed Banks (CBSBs) of the Present Study and the Crop Germplasm Maintained by the Respondent CBSBs

Name of the NGO/FPO/CSO associated with CBSB	Name of the State	Pulses	Paddy	Barley	Maize	Wheat	Major Millets	Minor Millets	Vegetables	Oil Seeds	Cash Crops	Total Crop Species	Total Crop Varieties
AASRA (Association For Active Service In Rural Areas)	Andhra Pradesh (20)						5	11				2	16
Agriculture People Poverty Line coaching Education Society. (APPLES)		6					1	3	2		1	5	18
Awakening Peoples' Action for Rural Development (APARD), Kurnool											1	1	1
Forum for Rural Development (FORD)							2	2				2	4
Grama Vikas							1	1				2	2
Jana Jagruti		4					4	5	1	2	3	6	25
Janajeevana MACS		3					3	2			3	4	15
Kovel Foundation		1	5									2	6
Kovel Foundation							2		2	1		3	8
Kranthi Society			1									1	1
National Association for Rural Integration (NARI)							1				2	2	3
People's Awareness and Social Service (PASS)		1					3	2			2	4	12
Rural Integrated Development Organisation (RIDO)							2	1				2	3
Rural Integrated Development Society (RIDS)		1									1	2	2
Sanjeevini Rural Development Society (SRDS)							2					2	2
Social Activities for Rural Development Society (SARDS)		16	5				2	2	1	1	3	7	37
Sri Satya Sai Farmers MACF Limited		1			1					1	5	4	8
Watershed Support Services and Activities Network (WASSAN)		2					3		1		1	4	11
Women Development society (WDS)		1									1	2	2
Sree Ganga Rural Development Society (SGRD)							2	2			1	3	8
Seven Sisters Development Assistance (SeSTA), Chirang District	Assam (4)		1								1	2	2
Seven Sisters Development Assistance (SeSTA), Kushdhuwa Block, Goalpara District,			1						2			2	3
Seven Sisters Development Assistance (SeSTA),			2						2			2	4
Seven Sisters Development Assistance (SeSTA),		1	1							1	1	4	4
Professional Assistance for Development Action (PRADAN)	Chhattisgarh (3)		21									1	21
Sahabhagi Samaj Sevi Sanstha		1	52				2	1				4	56
Sangata Sahabhagi Gramin Vikas Sansthan			10									1	10
Area Networking and Development Initiatives (ANANDi)	Gujarat (11)	4	1		1		1					4	7
Bavla Mahila Vikas Sangathan			2									1	2
Cohesion Foundation Trust		1	4			1		1				4	7
Dakshin Gujarat Vikas Sanstha		2	1									2	3
Development Alternatives (DA)		3				3					2	3	8
Development Support Centre (DSC)		3			1		2				2	4	8
Human Development and Research Centre		3			2					1		3	6
Satvik Promoting Ecological Farming		2					5		2	4		4	17
Vanita Sangthan		1	1		1							3	3
Rural Technology and Development Centre	Himachal Pradesh (1)			1			1	2				3	4
Vikas Sahyog Kendra (VSK)	Jharkhand (1)	3	7						2	1		4	13
Sahaja Samrudha	Karnataka (1)							2				1	2
Development Alternatives (DA)	Maharashtra (5)	1				6	1					3	8
Development Support Centre (DSC)		1	5			1	1	1				5	9
Gramin Yuva Pragatik Mandal		2	4			1			6	2		5	15
Pragati Abhiyan		2					1	2	1			4	10
Sourabh Gramvikas Bshud-deshiya pratishthan			1					1				2	2

Name of the NGO/FPO/CSO associated with CBSB	Name of the State	Pulses	Paddy	Barley	Maize	Wheat	Major Millets	Minor Millets	Vegetables	Oil Seeds	Cash Crops	Total Crop Species	Total Crop Varieties
Abhar Mahila Samiti	Madhya Pradesh (11)	1				1				2		3	4
Aga Khan Rural Support Programme - India (AKRSP-I)							3	2				2	5
Aga Khan Rural Support Programme - India (AKRSP-I)							3	2				2	5
Centre for Advanced Research And Development (CARD)						1						1	1
Development Alternatives (DA)		1				4	2				3	4	10
Development Support Centre (DSC)		1	1		1	2	4			1	2	7	19
Haritika						8						1	8
PRADAN			12									1	12
Pragati Rath			1									1	1
Samaj Pragati Sahyog (SPS)		5			5	2	7				5	3	24
Self-Reliant Initiatives through Joint Action (SRIJAN)						5						1	5
Mission Foundation Movement	Mizoram (1)										1	1	1
Ahinsa Club	Odisha (9)		1									1	1
Anubhab Agriculture Research Center, Katapali			10									1	10
DHAN Foundation									2			1	2
Kandhamal Zilla Sabuja Vaidya Sangathan							17	3				2	20
NIRMAN										3	1	2	4
NIRMAN							2	4				2	6
NIRMAN							3	3				2	6
Social Awareness Institution (SAI)									1			1	1
PRADAN							13				4	2	17
Apna Sansthan	Rajasthan (3)						1				2	2	3
Development Support Centre (DSC)		1	2		1	1	2					5	7
Development Alternatives (DA)		1				1						2	2
Action for Rural Development Society (ARDS)	Telangana (20)	1	4								2	3	7
Action for Rural Development Society (ARDS)		1				2					2	3	5
Balavikas		7	8		1		6	2			2	6	32
Comprehensive Health and Education Society for Tribal Development (CHESTD)		3	4						6		1	4	14
Ganglagudem MACS (WASSAN)		2	2								6	3	10
Jaganadhapuram MACS)		4	1								4	3	9
Koutaguda Watershed MACS		2					1					2	3
Mallaigudem MACS (WASSAN)		4	2		2		3	1		1	6	7	26
Meesala Vimala			5									1	5
Ringanguda Watershed MACS		2					1					2	3
Sahakara Mithra Samstha (Centre for Collective Development - CCD)		1								1		2	2
Society for Integrated Development Services (SIDS)		1	1		1		1					4	4
Society for Environment protection and Education Development - SEED NGO		1	2								1	3	4
Society for Women Education and Environment Trainings - SWEET NGO		2	6								1	3	9
Swathi Women & Rural Development Society (SWRDS)			4		1							2	5
Vikhasit Raythu Sankshema Samstha (VRSS)							2					1	2
Vikhasit Raythu Sankshema Samstha (VRSS)							1					1	1
Watershed Support services and Activities Network (WASSAN)		7	3				4		12		3	5	34
Watershed Support services and Activities Network (WASSAN)		1	1									2	2
Youth For Empowerment of Society (YES)		12	3		1		7	2		1	2	7	35
Khupilong Fishery Co-op.	Tripura (3)		3						2			2	5
Seven Sisters Development Assistance (SeSTA)					2				4		3	3	9
Seven Sisters Development Assistance (SeSTA)			3						1			2	4
Akhil Bhartiya Samaj Sewa Sansthan (ABSSS)	Uttar Pradesh (4)	2				4				3		3	9
Arunoday Sansthan		8				3				1	1	4	13
Bundekhand Sewa Sansthan		6									1	2	7
Yuva Kaushal Vikas Mandal						3						1	3



It was found that around **779 crop varieties** which includes **538 numbers** of indigenous crop varieties / landraces (**69%**) and **241 numbers** of improved crop varieties (**31%**) are maintained among the 97 CBSBs which are spread across fifteen Indian states (*Figure 1*).

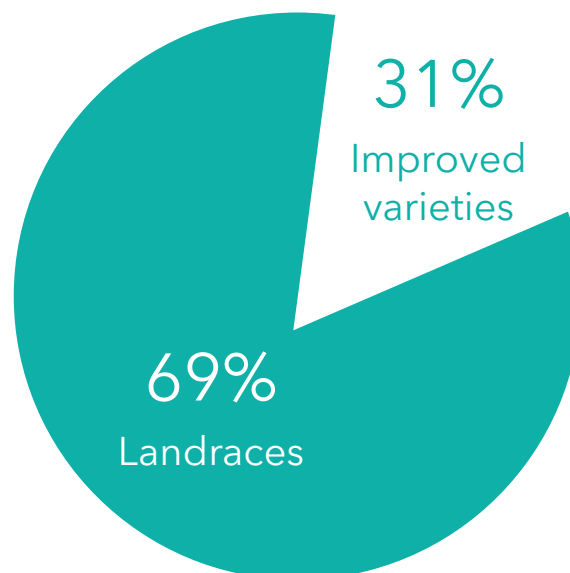


Figure - 1 : Share of Landraces and Improved Varieties maintained by Community-based Seed Banks of the Study Area

The **779 crop varieties** belong to **10 major crop species**. Out of the ten major crop species paddy has the largest number of varieties followed by pulses and major millets (*Figure - 2*).

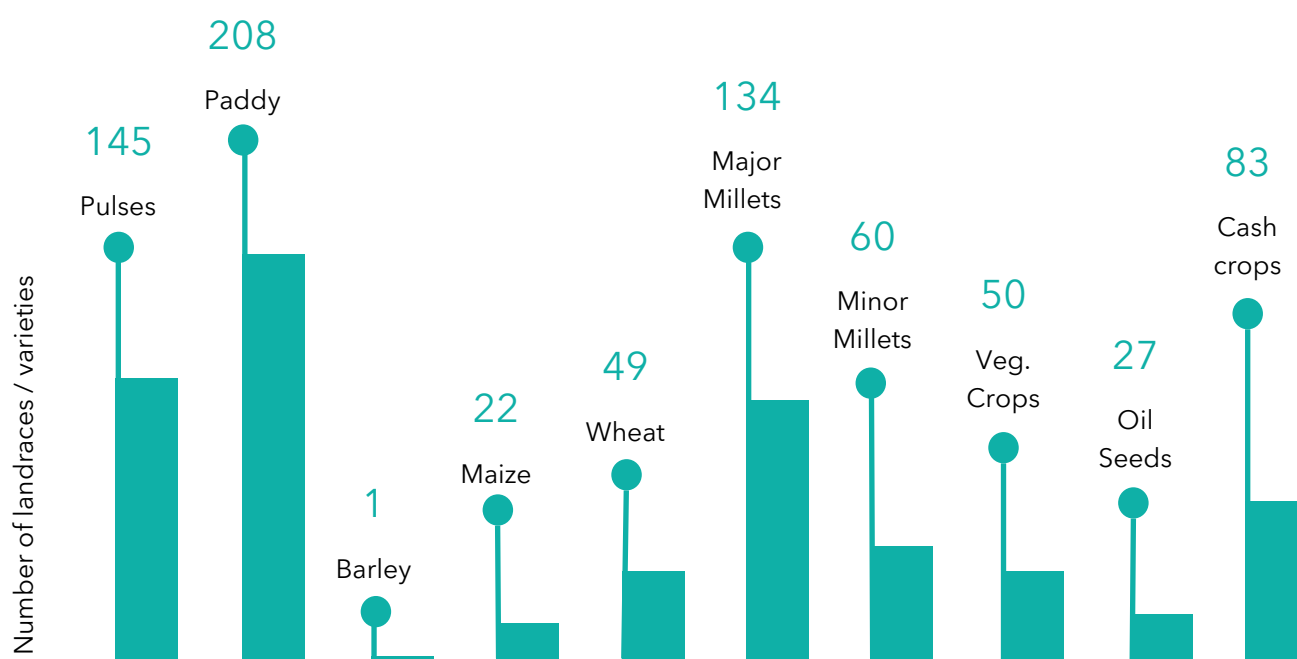


Figure 2. Major Crop Species and No. of varieties maintained by the Community-based Seed Banks of the Study Area





## Conclusion

It was found that about **779 crop varieties** belonging to **10 crop species** are maintained by the CBSBs of the study area. On an average each organization is managing about **8 crop varieties**. The majority of germplasm available with the CBSBs is related to the indigenous varieties and landraces. The results show that CBSBs play a vital role in maintenance and conservation of indigenous germplasm and agrobiodiversity. However, it is beyond the preview of the present study about the number of farmers each CBSB is catering. Further studies are necessary to understand their mode of operation, institutional structure, role of women farmers, impact on crop diversity and ascertain their efficiency in catering the needs of farmers in the context of climate change and changing food cultures, economic conditions, and agriculture policy landscapes.